AMENDMENT TO THE CLAIMS

Please **ADD** claims 24-26 as follows.

A copy of all pending claims and a status of the claims are provided below.

1-15. (canceled)

16. (original) A method of fabricating a varactor, comprising:
providing a semiconductor substrate:
doping a lower region of a semiconductor substrate with a first dopant;
doping a middle region of a semiconductor substrate with a second dopant; and
doping an upper region of the semiconductor substrate with a third dopant.

17. (original) The method of claim 16, further comprising forming a cathode of a varactor in the lower region, forming a hyper-abrupt junction in the middle region, and forming an anode in the upper region.

18. (previously presented) The method of claim 16, further comprising selecting the first dopant from a first N-type dopant, selecting the second dopant from a second N-type dopant, and selecting the third dopant from a P-type dopant.

19. (original) The method of claim 16, further comprising doping a bottom layer of the lower region of a higher concentration of the first dopant than an upper layer of the lower region.

20. (original) The method of claim 19, further comprising forming a collector of a varactor in the upper layer of the lower region of a semiconductor substrate.

21. (original) The method of claim 16, further comprising forming at least one isolation region adjacent to the lower, middle, and upper regions of the semiconductor substrate.

22. (original) The method of claim 16, further comprising forming at least one reach-through implant in electrical communication with the lower region of the semiconductor substrate.

23. (original) The method of claim 16, further comprising forming a silicide layer on a top of the semiconductor substrate above the upper region.

24. (new) A method of fabricating a varactor, comprising:

doping a lower region of a substrate layer with a first dopant having a dopant profile such that first energy atoms ("A") penetrate to a first depth ("A'") of the substrate layer forming a cathode and second energy atoms ("B") penetrate to a second depth ("B'") of the substrate layer forming a collector region above the cathode, wherein A>A' and B>B';

doping a middle region of the substrate layer with a second dopant which is tailored for an implant profile that forms an anode, the second dopant overlapping the collector region; and

doping an upper region of the substrate layer with a source/drain type implant to form the anode.

25. (new) The method of claim 24, wherein the forming of the collector region and the cathode are formed in a single doping step via energy distribution of a single dopant.

26. (new) The method of claim 24, wherein an active portion of the varactor is formed in a column from the substrate which is semiconductor material.